THE APPLICATION OF COOPERATIVE LEARNING MODEL TYPE OF THINK PAIR SHARE (TPS) TO IMPROVE MATHEMATICS LEARNING RESULTS OF CLASS VIII IN SMP NEGERI 1 SEDAYU BANTUL

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ABSTRACT

Most students assume that mathematics is a difficult subject that causes many students to make mistakes in solving math problems so that student learning results below. This research aims to improve the results of learning mathematics through cooperative learning model type Think Pair Share (TPS) on class VIII odd semester SMP Negeri 1 Sedayu Bantul academic year of 2016/2017. The research is the act of class research. Subject in this research is all students of class VIII F at SMP Negeri 1 Sedayu Bantul odd semester academic year 2016/2017 as many as 31 students. While the object examined was the improvement of the results of learning mathematics using cooperative learning model type Think Pair Share (TPS) on class VIII F at SMP Negeri 1 Sedayu. Research conducted in two-cycle. Data were collected by using sheets of observation, documentation, interviews, and quiz. The analysis of the data used is descriptive qualitative. The results showed that cooperative learning model type Think Pair Share (TPS) can improve the results of learning mathematics VIII F in odd semester SMP Negeri 1 Sedayu Bantul academic year 2016/2017. This is shown from the results of the mathematics has increased every cycle. On cycle 1 students are thoroughly studied individually there are 20 students with an average of the results of learning mathematics of 83.58 with be passing of classical 66.67% percentage and 100 the highest value and lowest value 40. On cycle 2 has increased is students are thoroughly studied individually there are 24 students with an average value of 88.93 with be passing of classical 80% percentage and 100 the highest value and lowest value 60.

Keywords: PTK, Think Pair Share (TPS), the results of the study, the results of learning mathematics

INTRODUCTION

Mathematics emphasizes solving a problem, problems in mathematics are presented in the form of mathematical problems. Mathematics lessons have been given since Kindergarten (Kindergarten) to equip students with the ability to think logically, analytically, systematically, critically and creatively to Higher Education (PT). Mathematics is initially simple but the higher the school level the higher the level of difficulty so it requires deep thinking.

Most of the eighth-grade students at SMP Negeri 1 Sedayu consider mathematics a difficult subject that causes many mistakes in solving math problems so that the learning outcomes of mathematics are low. Students who do not like math lessons make mathematics a burden on him.

THEORY

According to Most in Abdurrahman, Mulyono (2012: 203) mathematics is a way to find answers to problems faced by humans; a way of using information, using knowledge of shapes and sizes, using knowledge about counting, and the most important thing is to think in humans themselves in seeing and using relationships. According to Wragg in Aunurrahman (2014: 35-36) views and definitions of learning find some general characteristics of learning activities as follows (1) Learning shows an activity in someone who is aware or intentional (2) Learning is the interaction of individuals with their environment (3) Learning outcomes are marked by changes in behavior.

According Cockroft in Abdurrahman, Mulyono (2012: 204) mathematics needs to be taught to students because (1) Always used in terms of life (2) All fields of study require appropriate mathematical skills (3) Is a means of communication that is strong, brief, and clear (4) Can be used to present information in various ways (5) Increase the ability to think logically, accuracy, and spatial awareness (6) Provide satisfaction with efforts to solve challenging problems. Roger and David Johnson in Suprijono,

Agus (2009: 58) not all group learning can be considered cooperative learning. To achieve maximum results, there are five elements in cooperative learning that must be applied, namely (1) Positive Interdependence (2) Personal Responsibility (3) Personal Responsiveness (3) Promotive interactions (Face to face promotive interaction) (4)) Communication between members (Interpersonal skills) (5) Group processing (Group Processing).

The purpose of the cooperative learning model according to Suprihatiningrum, Jamil (2013: 197) is (1) Cooperative learning provides benefits to both upper and lower group students who work together to complete academic tasks (2) Cooperative learning presents opportunities for students of various backgrounds and conditions, for working and interdependent on shared tasks (3) Development of social skills Cooperative learning teaches students the skills of collaboration and collaboration. This skill serves to expedite work relationships and tasks.

Characteristics of cooperative learning according to Hamdani (2010: 31) are (1) Each member chooses a role (2) There is a direct interaction between students (3) Each group member is responsible for the way he learns and also his group friends (4) The teacher helps develop group interpersonal skills (5) The teacher only interacts with the group when needed. According to Trianto (2011: 126), the TPS learning model is TPS Type Cooperative Learning Model is one of the cooperative learning programs that are easy and simple to implement at all levels of education. TPS type cooperative learning or thinking, pairing, and sharing are effective ways to vary the atmosphere of class discussion patterns. The procedure used in TPS can give students more time to think, respond and help one another.

Steps in Implementing Cooperative Learning Model Type of TPS according to Trianto (2011: 61-62) are (1) Thinking (2) Pairing (Pair), (3) Sharing (Share). The advantages of the TPS Type Cooperative Learning Model according to Arifin, Zainal & Adhi Setyawan (2012: 64) are the TPS type cooperative learning model students can be actively involved in discussions or collaborate with friends. This is because the type of TPS discussion group is not too much consisting of 2 students (small groups) each group and discussions with 2 students are more effective than group discussions consisting of 4-5 students. This TPS learning emphasizes thinking of 2 people in solving problems raised by teachers. Thinking 2 people is much better than thinking alone - alone because there are opportunities for sharing opinions. This TPS model can help students who are passive dare to convey ideas, opinions, and experiences to their friends.

According to Keller and Ely Abdurrahman, Mulyono (2012: 27) learning outcomes are actual achievements displayed by children. Learning outcomes are influenced by the amount of effort done by children. According to Gagne (in Abidin, Muhammad Zainal, 8: 2011) that mathematical learning outcomes are abilities possessed by students after they receive their mathematical learning experience or it can be said that mathematics learning outcomes are changes in behavior in students, which are observed and measured in the form of changes in knowledge, behavior, attitudes, and skills after learning mathematics. These changes are interpreted as an increase and development towards a better than before.

The formulation of the problem in this study is whether learning mathematics using cooperative learning models Think Pair Share (TPS) can improve mathematics learning outcomes in students of class VIII SMP Negeri 1 Sedayu Bantul Regency odd semester 2016/2017 academic year with the subject matter of factorizing algebraic forms and operations fraction in algebraic form on sub algebraic subject?

In accordance with the above problem formulation, the aim of this study is to find out the improvement of mathematics learning outcomes using cooperative learning models of Think Pair Share (TPS) type in VIII grade students of SMP N 1 Sedayu in the 2016/2017 academic year with the subject matter of factorizing algebraic forms and fractional operations in the form of algebra in the sub-topics of algebra.

RESEARCH METHODS

This research is Classroom Action Research (CAR). Four important stages that must be passed in class action research according to Suharsimi arikunto (2012: 17-20) are (1) Arranging the Action Plan (Planning)(2) Acting (3) Observing (4) Reflecting. Place and Time This research was conducted at SMP Negeri 1 Sedayu, Bantul Regency in the odd semester of the 2016/2017 school year.

Subjects studied in this study were all students of class VIII F odd semester of SMP Negeri 1 Sedayu in the 2016/2017 school year as many as 31 students. The object under study was an increase in mathematics learning outcomes using the TPS type of cooperative learning model in eighth-grade students of SMP Negeri 1 Sedayu. The research procedure used in Classroom Action Research consists of two cycles. In cycle I and II using Think Pair Share (TPS) type of cooperative learning model then the researcher acts as a teacher.

At the planning stage that will be carried out in research, including (1) Developing a lesson plan (RPP) by considering the steps of learning with the type of cooperative learning model (TPS) (2) Preparing Student Activity Sheets (LKS) for cycle I (3) Preparing questions for the first cycle quiz (4) Prepare teacher observation sheets.

At the implementation stage of the action taken by researchers is implementing learning with Think Pair Share (TPS) type of cooperative learning model.This observation activity is carried out to record the things that happened during the action research implementation activities. The things that were observed were the learning process using the TPS type of cooperative learning model and the teacher activity observation sheet. After the learning process is finished, it is continued with a quiz that is held at each meeting to get the results of learning mathematics. The observations are used as material for reflection. In the reflection stage, the researcher conducts data processing and conducts discussions with the mathematics teacher to consider the strengths or bad actions taken in the first cycle, then formulates the action plan to be carried out in the next cycle.

Data collection techniques in this study used observation, documentation, interviews, and quizzes. Observation and documentation are used to get an overview of teacher and student activities carried out during the mathematics learning process. Interviews are used to determine the response of teachers and students about learning mathematics by using a cooperative type TPS model. Whereas quizzes are used to measure mathematics learning outcomes in students.

Data on the quiz results are calculated on average. The results are compared with preliminary data, if there is an increase in mathematics learning outcomes and meet the indicators of success it can be assumed that the cooperative learning model of the TPS type can improve mathematics learning outcomes.

Completeness is calculated by the following formula:

$$K = \frac{s}{x} \times 100\%$$

Information:

K = percentage of classical learning completeness

s = students who completed individual learning

x = many students in one class

According to Sugiyono (2012: 338-345), the results of interviews can be analyzed by (1) Data Reduction (2) Data Display (Data Presentation) (3) Conclusion Drawing (Verification).

Indicators of the success of this study are (1) The average mathematics learning outcomes have increased and classical completeness reached 77%.

RESULTS AND DISCUSSION

Learning activities that have been carried out in cycle I and cycle II using cooperative learning models Think Pair Share (TPS) shows that there is an increase in mathematics learning outcomes in students with the subject matter of algebraic formalization and fraction operations in the form of algebra in algebraic sub-subjects.

Based on the reflection of cycle I obtained the following things (1) The group discussion did not go well because there were some groups that were not focused and did not discuss the existing problems (2) The guidance from the teacher was uneven so there were still some students who waited and scrambled to waiting for guidance from the teacher (3) Only a few students are actively asking questions (4) Some students are still working together on quizzes (5) Students are still not careful in calculating positive and negative values.

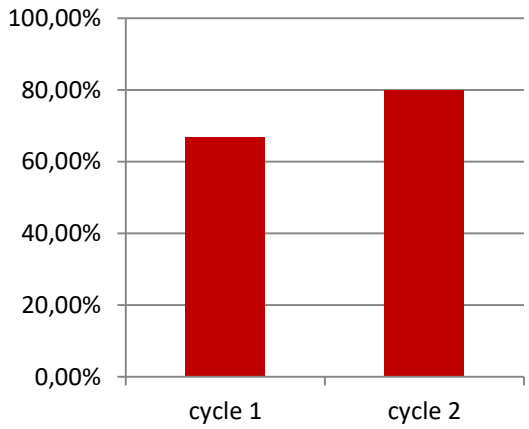
After completing the second cycle the following conclusions can be drawn (1) The results of mathematics learning students have shown an increase from cycle I to cycle II (2) Students have been more careful in solving mathematical problems seen from the value of students who have increased from cycle I to cycle II (3) In the first cycle the classical completeness reached 66.67%, an increase in the second cycle was 80% (4) Students who completed the KKM in the first cycle were 20 students and in the second cycle were 24 students (5) The average value of the quiz on the first cycle was 83.58 in the second cycle was 88.93.

Improved mathematics learning outcomes for students can be seen in the following table:

Table 1. Classical completeness in cycle I and cycle II

No	Observed aspects	Percentage		Info.
		Cycle 1	Cycle 2	
1.	Classical completeness	66,67%	80%	Increase
2.	Average learning outcomes	83,58	88,93	Increase

For more details will be presented in the following graph:



Picture I. Graph of increased classical completeness in cycle I and cycle II

Based on Table 1 shows that the average percentage of classical completeness in the first cycle was 66.67% and the average learning outcome was 83.58. This shows that the indicators of success have not been achieved because classical completeness has not reached 77%. After reflection on improvements in the teaching and learning process in the second cycle and increase in classical completeness to 80% and an average learning outcome of 88.93. This figure has met the indicators of success, so this research has been successful. Success provisions state that this study was successful if there was an increase in the average learning outcomes of mathematics and classical completeness reached 77%, from the first cycle the average learning outcomes were 83.58 with the percentage of classical completeness 66.67% and in

the second cycle the average results learn 88,93 with 80% classical completeness percentage. That means the learning outcomes of mathematics have increased and classical completeness has exceeded 77%.

Student responses to mathematics learning using the Think Pair Share (TPS) type of cooperative learning model are very good. This can be seen from the results of researchers' interviews with several students of class VIII F.

CONCLUSION

An increase in mathematics learning outcomes and the percentage of completeness classical. In the first cycle students who have finished learning individually, there are 20 students with an average value of 83.58 with a percentage of classical completeness is 66.67% and the highest score of 100 and the lowest value of 40. In the second cycle students who have finished learning individually there, 24 students with an average score of 88.93 with a percentage of classical completeness are 80% and the highest score is 100 and the lowest score is 60.

Mathematics learning using TPS type cooperative learning models gets positive responses from students meaning students are interested so that mathematics learning outcomes can be improved by using TPS type cooperative learning models.

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